**REMARKS**

Claims 1-12, 14-23 and 25-40 remain in this application. Claims 13 and 24 have been previously cancelled. Claims 1, 12, 15, 20, 27, 31, 35 and 38 have been amended.

Applicant thanks the Examiner for the detailed study of the application and prior art.

Applicant notes the use of the new secondary prior art reference, U.S. Patent No. 5,061,998 to Yasuki et al. (hereinafter "Yasuki") to teach, according to the Examiner, that it would be obvious to modify the system of Dougherty by providing a well known method of inserting ancillary or additional information on each of the upper and lower portions of the image plane in order to prevent or avoid the complicated process of spreading the content data in several frequency bands in the composite signal.

At the outset, Applicant stresses that the present claimed invention is not rendered obvious by the combination of Dougherty and Yasuki, or Dougherty, Stewart and Yasuki, or Stewart and Yasuki as set forth by the Examiner in the Office Action mailed March 26, 2004. Applicant stresses that the present invention as now set forth in the amended independent claims encodes information into a video signal by inserting new data content into an active portion of the video signal by

substituting a modulated frame of data into single top and bottom video lines containing luminance information. This is clearly set forth in the detailed description and as a specific example in FIG. 4, where content data is positioned in single top and bottom lines of the video signal.

Indeed, page 13 of the instant patent application specification recites that as shown in FIG. 7, a line of information that could be substituted into the video line (a single line) includes a clock run-in as five symbols, synchronization data as 13 symbols, a synchronization guard as two symbols, a data ID as two symbols, a frame marker as two symbols, data content as 208 symbols, a reserved space of two symbols, and a clock run-out of four symbols, to form a total of 238 symbols with 714 RGB pixels, as a non-limiting example. This line could be inserted with distinct data fields and can be generated, such as from the table shown in FIG. 8.

Applicant notes the rejection of claims 1-11, 20-23, and 25-40 as obvious over Dougherty in view of Yasuki, claims 12 and 14 as obvious over Dougherty in view of previously cited Stewart, and further in view of Yasuki, and claims 15-19 as obvious over Stewart in view of Yasuki.

Without going into undue detail regarding Dougherty and Stewart as emphasized in the last remarks filed in the

last Amendment, Applicant stresses that nowhere do the prior art references either singularly or in combination disclose or suggest the system, encoder, decoder and method where the modulated frame of data from a modulation and video synchronization circuit, for example, is substituted into selected video lines of a video data stream by substituting the modulated frame of data into single top and bottom video lines containing luminance information.

The Examiner concludes that Dougherty does not specifically disclose inserting the content data into top and bottom video lines. However, the Examiner argues that inserting additional content data into this part of the active video portion as Dougherty indicates is well known in the art, and that Yasuki discloses that a television signal includes 482 effective scanning lines for each frame in the vertical direction and thus the additional signal is superposed on 19 (=38/2) of the 38 scanning lines which lie on each of the upper and lower portions of the image plane.

It is clear that nowhere does Yasuki disclose or suggest substituting selected lines of the video data by substituting the modulated frame of data into single top and bottom video lines.

Yasuki is very clear that entire portions of top and bottom video lines, including as many as 19 different lines, can be used for substitution. This teaching is set forth clearly in column 1, starting at line 40, and continuing onto column 2, line 13 as follows:

> "That is, a television signal includes 482 effective scanning lines for each frame in the vertical direction (in practice, 483 scanning lines are provided, but since one of them is used for multiplexed text broadcasting, 482 scanning lines can be effectively used), and 482 x (8/100)=38 of the scanning lines are used for multiplexing new additional signals. Therefore, not the television signal but the additional signal is superposed on 19 (=38/2) of the 38 scanning lines which lie on each of the upper and lower portions of the image plane.
>
> The above additional signal may include side panel components for increasing the width of the image plane (refer to "A Wide Screen EDTV" IEEE Transaction on Consumer Electronics, Vol. 35, No. 3, P.133-P.141, AUGUST 1989), high-definition components of the luminance signal Y and chrominance signal C (refer to "Extended Definition TV Fully Compatible with Existing Standard" IEEE Transactions on Communications, Vol. COM-32, No. 8, P.948-P.953, AUGUST 1984), and helper signals for sequential scanning/conversion (refer to "Encoding for Compatibility and Recoverability in the ACTV System" IEEE Transactions on Broadcasting, Vol. BC-33, No. 4, P.116-P.123, DECEMBER 1987).
>
> However, when the additional signals are superposed on all of the 19 scanning lines on each of the upper and lower portions of the image plane, no margin can be taken for the

> overscanning in the vertical direction. As a result, when the central value in the vertical deflection is deviated, the image plane may be partly cut out as shown by a hatched portion in FIG. 2. In this case, the partial cut-out of the image plane also occurs when the vertical deflection amplitude is lowered and the raster is slightly narrowed in the vertical direction.
>
> In view of the above fact, the number of scanning lines on which the additional signals are multiplexed on each of the upper and lower portions is limited to about 7 in the prior art so as to prevent the image plane from being partly cut out even when the vertical deflection center is deviated or the vertical deflection amplitude is lowered."

In order to overcome this problem in Yasuki where so many lines are substituted, and to prevent the image plane from being partly cut out even when the vertical deflection center is deviated, an additional signal separation device is provided. Additional signals are multiplexed onto the entire portion of the vertical overscanning area without incurring the partial cut-out of the image plane.

It is clear that the combination of Dougherty and Yasuki would provide a hierarchical ancillary code that is frequency-interleaved between harmonics of a horizontal sync frequency of the composite video signal. This would be added to a composite video signal in its active video portion of multiple lines at top and bottom portions. This is opposite

from the present claimed invention in which the interleaver is operatively connected to the modulation and video synchronization circuit and interleaves the modulated frame of data into selected lines of the video data stream by substituting the modulated frame of data into single top and bottom video lines containing luminance information.

The cited Stewart reference is directed to decoding video signals that are encoded in different formats using an adaptive coder to provide a decoded output as a function of a code rate selected from a number of code rates. Stewart is directed to digital television systems that can accommodate multiple decoding functions using digital television signal processing methods. The deinterleaver or interleaver in Stewart is operative with a synchronization network that detects sync words in interleaved data signals and provides output signals synchronized in beginning of data. The sync words are not interleaved, but occur at periodic intervals in time. Output synchronization signals from a unit 75 are provided to address generators 80 and 85 for synchronizing address signals from generators 80 and 85 with interleaved data for a mapper 70. According to Stewart, the generators 80,85 are operative as portions of deinterleavers that synchronize address signals with interleaved data from a

mapper 70. A sequence of write addresses are produced by the generators 80,85 to ensure that interleaved data from the mapper 70 is written into memory locations of memory 95 in the order in which the input interleaved data is received. This sequence of read addresses produced by generators 80,85 ensures that data is read out of memory 95 in a desired interleaved order. This information can then be decided by a decoder.

Nowhere does Stewart disclose or suggest the present claimed invention of any decoder or system that decodes a video signal in which luminance information has been substituted with a modulated frame of content data on single top and bottom video lines of an active portion of the video signal and a line separation and restoration circuit extracts the content data from single top and bottom lines of the active portion of the video signal.

It is clear that the present claimed invention as now set forth in the amended claims in this Amendment is patentable over the cited prior art. Nowhere do the references either singularly or in combination suggest the system, method, encoders, and decoders of the present invention.

In re Patent Application of:
**FOLIO**
Serial No. **09/884,897**
Filing Date: **06/19/01**
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Applicant contends that the present case is in condition for allowance and respectfully requests that the Examiner issue a Notice of Allowance and Issue Fee Due. If the Examiner has any questions or suggestions for placing this case in condition for allowance, the undersigned attorney would appreciate a telephone call.

Respectfully submitted,

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**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: **MAIL STOP AMENDMENT, COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450**, on this 21st day of June, 2004.